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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/763,355

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Ravi Murthy

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EXAMINER

LEWIS, CHERYL RENE A

ART UNIT

PAPER NUMBER

2167

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/08/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/763,355

Applicant(s)

MURTHY ET AL.

Examiner

Cheryl Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-50 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/21/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This Office Action is in response to the applicants' communication received on December 12, 2006 and December 21, 2006.
2. Claims 1-50 are presented for examination.
3. The applicants' have amended claims 1, 13, 22, 35, and 45-50.
4. Applicants' arguments received on December 12, 2006 have been fully considered but they are not deemed to be persuasive.

### **INFORMATION DISCLOSURE STATEMENT**

5. The information disclosure statements filed on December 21, 2006, complies with the provisions of MPEP § 609. They have been placed in the application file, and the information referred to therein has been considered as to the merits.

### ***Response to Arguments***

6. a. The applicants' arguments recite the following: "Lal specifically provides storage plan for the nodes in the database and does not teach, suggest or disclose storing a path for the nodes."
  - a1. The examiner respectfully disagrees with the applicants' arguments. Lal does teach storing a path for the node. According to Microsoft's Computing Dictionary, a path is a general form of a data structure (i.e. tree structure) that uniquely identifies a location within a data structure (i.e. node). Lal teaches the location of a node within a path of a tree structure (col. 5, lines 50 and 51). In particular, Lal teaches the claim

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limitation "storing a path for the nodes". Lal teaches "preserving" the hierarchical tree structure, parent-child order (i.e. identifiable locations of the tree structure), and components of the XML document (col. 4, lines 15-17). Lal's invention preserves the hierarchical tree structure and parent-child order of a markup based document, as well as the character data and attribute values found in that document (col. 4, lines 44-48).

Also, Lal teaches the root element of the XML document is stored in the ELEMENT table and always has an id=0. The children elements of the root element are also stored in the EMEMENTS table. (col. 6, lines 15-34, col. 11, lines 20-27).

b. The applicants' arguments recite the following: "Thus, Lal does not teach or suggest producing a result set based upon executing the SQL query, wherein the path for a node in the computer implemented structure is accessed during execution of the SQL query."

b1. The examiner respectfully disagrees with the applicants' arguments. Lal teaches for querying the database markup tables the method uses SQL queries to retrieve the XML document components in the XML format (Abstract, lines 14-17). Lal teaches the SQL Querying stage includes querying of the twelve markup relational tables with XML data to obtain a relational result set. The second stage is the Result Set Transformation stage which transforms the relational result set, obtained in the first stage, to obtain an XML result set (col. 8, lines 2-48). Therefore, Lal teaches producing a result set based upon executing an SQL query, wherein a path for a nod in a computer implemented structure is accessed during execution of the SQL query.

c. The applicants' arguments recite the following: "Lal does not teach the storage structure comprises a path for a node within the unstructured document."

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c1. The examiner respectfully disagrees with the applicants' arguments. Lal teaches the means for an unstructured document. Lal teaches retrieving documents that have an original document format (col. 4, lines 3-5). If it is the applicants intention to expressly claim an 'unstructured document', then the applicants' should kindly state what are the attributes of this claimed 'unstructured document'. The applicants' specification regarding the attributes (teaching) of their 'unstructured document' are not presented in the specification.

In fact, the examiner finds the applicants' arguments to be contradictory to the claim limitations presented in dependent claim 36. Dependent claim 36 of the applicants' claim clearly identifies the 'unstructured document' as an XML document. Likewise, Lal teaches an XML document (Abstract, line 4).

Thus, the remaining claims, dependent claims, are also addressed by the above remarks for comprising limitations based on limitations of the independent claims.

### ***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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8. Claims 1-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Lal (Pat. No. 6,832,219 B2 filed March 18, 2002).

9. Regarding Claims 1, 13, 37, 45, and 46, Lal teaches a method and system for storing and querying of markup based documents in a relational database. The method and associated system for storing and querying of markup based documents in a relational database as taught or suggested by Lal includes:

assigning a document identifier to an XML document (col. 4, lines 10-24); parsing the XML document to identify a node (col. 4, lines 52-64, col. 5, lines 38-60); the identified node in the XML document (col. 5, lines 38-67, col. 6, lines 1-40); storing path information for the node (col. 3, lines 62-67, col. 4, lines 15-17 and 44-48, col. 5, lines 50 and 51, col. 6, lines 15-34, col. 11, lines 20-27); storing hierarchical information for the node (col. 4, lines 10-25); and storing node data for the node (col. 3, lines 62-67, col. 4, lines 1-25, col. 5, lines 38-67, col. 6, lines 1-40).

10. Regarding Claims 2 and 14, Lal teaches the hierarchical information comprises a hierarchical level within the XML document (col. 4, lines 10-25).

11. Regarding Claims 3 and 15, Lal teaches the node data comprises a node type (col. 4, lines 52-64).

12. Regarding Claims 4 and 16, Lal teaches the document identifier is a unique identifier for each different XML document (col. 4, lines 52-64, col. 5, lines 1-60).

13. Regarding Claims 5 and 17, Lal teaches the path information comprises a full path for the node (col. 6, lines 11-40).

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14. Regarding Claims 6 and 18, Lal teaches the path information comprises a path identifier (col. 5, lines 37-60).

15. Regarding Claims 7 and 20, Lal teaches the path identifier corresponds to a key to a path entry containing a full path for the node (col. 5, lines 37-60).

16. Regarding Claims 8 and 19, Lal teaches the path entry resides in a first table structure and the path information (col. 5, lines 36-67, col. 6, lines 1-40), hierarchical information, and node data reside in a second table structure (col. 5, lines 36-67, col. 6, lines 1-40).

17. Regarding Claims 9 and 21, Lal teaches the path entry comprises node name corresponding to a name of a terminal node (col. 5, lines 36-67, col. 6, lines 1-40).

18. Regarding Claim 10, Lal teaches maintaining one or more indexes (col. 5, lines 36-67, col. 6, lines 1-40).

19. Regarding Claims 11, Lal teaches one or more indexes comprises an index of a path identifier (col. 5, lines 36-67, col. 6, lines 1-40), an index on the document identifier and a start position (col. 5, lines 36-67, col. 6, lines 1-40), or an index on the document identifier (col. 5, lines 36-67, col. 6, lines 1-40).

20. Regarding Claim 12, Lal teaches the path identifier corresponds to a key to a path entry containing a full path for the node (col. 5, lines 36-67, col. 6, lines 1-40), the path entry resides in a separate table (col. 5, lines 36-67, col. 6, lines 1-40), and one or more indexes comprise an index on path identifiers (col. 5, lines 36-67, col. 6, lines 1-40).

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21. Regarding Claims 22, 47, and 48, Lal teaches generating a SQL query against the computer-implemented structure (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38); and producing a result set based upon executing the SQL query (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38), wherein the path for a node in the computer implemented structure is accessed during execution of the SQL query (col. 8, lines 2-48).

22. Regarding Claim 23, Lal teaches the SQL query reconstructs the XML document (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

23. Regarding Claims 24 and 26, Lal teaches the SQL query provides the same result (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

24. Regarding Claim 25, Lal teaches the SQL query identifier a fragment within the XML document (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

25. Regarding Claim 27, Lal teaches the SQL query corresponds to an XPath expression (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

26. Regarding Claim 28, Lal teaches the XPath expression is translated to the SQL query by breaking the XPath expression into multiple components (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38); creating a



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new SQL query corresponding to each of the multiple components (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38); and joining the new SQL query corresponding a component to its previous component (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

27. Regarding Claim 29, Lal teaches the XPath expression is broken into multiple components by considering each continuous segment of simple XPath, wherein each occurrence of a predicate within the XPath causes creation of a new component (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

28. Regarding Claim 30, Lal teaches a set of node names separated by "/" corresponds to a single XPath component (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

29. Regarding Claim 31, Lal teaches the new SQL query comprises a join of a path\_index\_table and a path\_table (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

30. Regarding Claim 32, Lal teaches the new SQL query comprises one or more conditions (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

31. Regarding Claim 33, Lal teaches one or more conditions comprises a condition for the node type (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

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32. Regarding Claim 34, Lal teaches joining the new SQL query corresponding the component to its previous component uses a join condition comprising a join on a document identifier (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

33. Regarding Claims 35, 36, 49, and 50, Lal teaches storing the unstructured document in a storage structure in the relational database system (col. 3, lines 40-67, col. 4, lines 1-36), the storage structure corresponding to a universal schema (col. 3, lines 40-67, col. 4, lines 1-36), wherein the storage structure (col. 4, lines 1-9) comprises a path for a node within the unstructured document (col. 4, lines 1-36); determining whether to create an index upon the storage structure (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38), wherein one or more indexes are maintained if desired (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38); and accessing the unstructured documents by accessing the storage structure (col. 3, lines 40-61, col. 4, lines 10-36, col. 7, lines 57-67, col. 8, lines 1-48, col. 11, lines 23-38).

34. Regarding Claims 38-44, the limitations of these claims have been noted in the rejection of claims 1-37 presented above. They are therefore rejected as set forth above.

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**NAME OF CONTACT**

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl Lewis whose telephone number is (571) 272-4113. The examiner can normally be reached on 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

(571) 273-4113 (Use this FAX #, only after approval by Examiner, for "INFORMAL" or "DRAFT" communication. Examiners may request that a formal paper/amendment be faxed directly to them on occasions.).

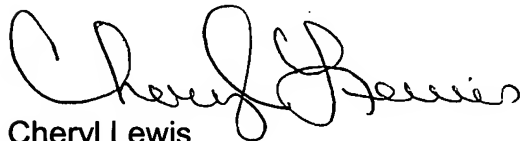
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/ Technology Center (571) 272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Cheryl Lewis  
Patent Examiner  
March 1, 2007